

## **Manufacturing and Mechanical Engineering Technology**

### **Master of Science in Mechanical and Manufacturing Engineering Technology (MMET)**

#### **Thesis Option**

The Master of Science in Mechanical and Manufacturing Engineering Technology (MMET) degree is an opportunity for students in the program to greatly expand their knowledge of design and integration of mechanical and manufacturing systems. Each student in the program will be able to customize the program to fit their specific needs and interests through course and research topic selection and choosing a thesis option (more research intensive) or capstone option (more course work intensive). A guide for graduate students published by the Wallace Center entitled “Information & Services for Graduate Students” is available at:

<http://infoguides.rit.edu/thesis-services>

The requirements for graduation and details of the thesis research option are described below. These requirements are the same for students entering the program through the 2/3 Undergraduate/Graduate (BS/MS) program or post baccalaureate.

#### **Program Overview**

The MMET program requires a minimum of 36 credit hours to meet the requirements for graduation. Of the required credits, 18 credit hours (6 courses) are allocated to required courses, 9 credit hours (3 courses) for a student’s particular concentration, 3 credit hours (1 course) for an elective to be chosen by the student with advisor approval, and 6 credit hours to plan, execute, and document their thesis. An example schedule of courses is available at:

<https://www.rit.edu/cast/mmet/graduate-programs/ms-in-manufacturing-and-mechanical-systems-integration>

Upon acceptance into the MMET program, students will work with the Director of Graduate Studies & Research (Graduate Director) to successfully integrate into the department and schedule their first semester of classes.

During the second semester, each student must identify a faculty advisor. The faculty member will be the primary technical mentor to the student, direct their thesis research, and guide/approve course selection to support the student’s area of concentration. Achieving a good relationship between the student and advisor and identifying a meaningful topic for study are key elements in a successful Master’s degree program.

**By the conclusion of the student’s second semester, with the advice and consent of their advisor, students must:**

- Identify a graduate committee consisting of one additional faculty member (may be outside the MMET department) and the Graduate Director.
- Submit a Thesis Research Plan to the Graduate Director for approval.
- Submit a Plan of Study listing all courses to be taken during course of study to fulfill the concentration/technical elective requirements to the Graduate Director.

#### **Thesis Topic Selection**

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Selection of a thesis topic and completing the independent research work commensurate with the thesis is a central aspect of the Master degree program. The student should take great care in identifying a topic of interest to them, and supports the research effort of the faculty advisor. Students who leave the decision of a thesis topic until late in their graduate program, and are slow to get started on their literature review and background research, historically have a lower probability of completing their degree.

A Master's program of study is quite different from an undergraduate program, particularly because of the manner in which the student is expected to self-direct their thesis work, be self-motivated, and determine their own schedule. Therefore, it is important for you to establish a project work and timing plan for your own benefit. The project plan should be updated regularly to ensure timely completion of all tasks.

By the **end of week 10 of the second semester after acceptance into the MMET** program the student must complete a formal thesis proposal for review by their committee. The proposal must include a project topic/hypothesis, a detailed plan of work, and timing plan for each step. The advisor will review the proposal with the student and when it is ready for submittal, will request the student schedule a meeting with their committee at which the student will present their proposal. The committee has 1 week from the date of the proposal presentation to either approve the proposal or submit to the student a written list of improvements that must be made to the proposal prior to approval. An approved proposal is required by the end of week 15 of the students second semester after acceptance to the MMSI program.

### Required Proposal Content

- Title
- Abstract (200-500 words, summary of proposal)
- Introduction/Background on topic/problem/project
  - Definitions, assumptions, significance of issue
- Project Aims, rationale, question(s) to be addressed
- Method used for research (analysis, testing, case study)
  - Design, testing, equipment needed
  - **Required materials, services, etc., anything that needs financial support**
- Expected results
- The plan of action (MS Project Gantt Chart)
  - step by step actions/due dates/required resources
- Bibliography
- Appendices containing any additional pertinent information

**Thesis Proposal Form**

(Completed Proposal required by end of week 12 of second semester following acceptance to the MMSI program including the 3/2 (BS/MS)option)

Today's date \_\_\_\_\_

Student Name \_\_\_\_\_

Student UID \_\_\_\_\_

PROPOSED THESIS TITLE:

**Attachments: Approved Proposal**

**Signatures:**

Student \_\_\_\_\_ Date \_\_\_\_\_

Faculty Advisor \_\_\_\_\_ Date \_\_\_\_\_

Committee Member \_\_\_\_\_ Date \_\_\_\_\_

Graduate Director \_\_\_\_\_ Date \_\_\_\_\_

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### Plan of Study (Thesis Option)

(Completed Plan of Study required by end of week 5 of the 2<sup>nd</sup> semester following acceptance to the MMSI program including the 3/2 option)

Today's date \_\_\_\_\_

Student Name \_\_\_\_\_

Student UID \_\_\_\_\_

<b><i>Concentration Courses</i></b>		
<b><i>Course Title</i></b>	<b><i>Course Number</i></b>	<b><i>Term to be completed</i></b>
<b><i>Elective</i></b>		
<b><i>Course Title</i></b>	<b><i>Course Number</i></b>	<b><i>Term to be completed</i></b>

### Signatures:

Student \_\_\_\_\_ Date \_\_\_\_\_

Faculty Advisor \_\_\_\_\_ Date \_\_\_\_\_

Graduate Director \_\_\_\_\_ Date \_\_\_\_\_

**“Thesis Title”**

**“Today’s date”**

**“Student Name”**

***In Partial Fulfillment of the requirements for a Master of Science degree in Mechanical and  
Manufacturing System Integration***



**Approval Signatures:**

\_\_\_\_\_ Date \_\_\_\_\_  
*Faculty Advisor Name* and Rank

\_\_\_\_\_ Date \_\_\_\_\_  
*2<sup>nd</sup> committee member name* and Rank

\_\_\_\_\_ Date \_\_\_\_\_  
*Elizabeth M. Dell, Professor*  
*Program Director of Graduate Studies and Research*

### ***Checklist of Activity***

#### **Getting Started (During your first term)**

- ☐ Contact the Director of Graduate Studies & Research concerning plan of study
- ☐ Complete required course work
- ☐ Register for second term

#### **Making Progress (second term)**

- ☐ Submit completed Plan of Study to Research Director for approval
- ☐ Select your faculty advisor
- ☐ Select advisory committee
- ☐ Develop Thesis Proposal and review with advisor (by week 10)
- ☐ Schedule presentation of proposal with MMET office
- ☐ Present Proposal to Committee (by week 12)
- ☐ Receive Committee Feedback and address as required
- ☐ Submit signed Thesis Plan Approval Form and all attachments to Research Director
- ☐ Schedule regular status reviews of your work with thesis faculty advisor
- ☐ Review/revise plan of action with thesis faculty advisor
- ☐ Register for courses based on plan of study

#### **Nearing Completion (one term before you graduate)**

- ☐ Write thesis and publication
- ☐ Review draft thesis with advisor/committee
- ☐ Revise and re-review (may require multiple iterations)
- ☐ Register for courses based on plan of study

#### **Graduating (the term you plan to graduate)**

- ☐ Register for final classes as required
- ☐ Clear all incomplete grades
- ☐ Clear all holds
- ☐ Submit plan to graduate to Graduate Director
- ☐ Schedule presentation of thesis with MMET office (No later than week 12)
- ☐ Complete your presentation of thesis
- ☐ Receive Committee Feedback and address as required
- ☐ Submit completed and approved copy of thesis to Research Director (electronic and paper)
- ☐ Celebrate, and join RIT Alumni Association